

NATURAL HISTORY

THE MAGAZINE OF
THE AMERICAN MUSEUM OF NATURAL HISTORY

VOLUME LXVIII
1959

TEN ISSUES A YEAR

Published by
THE AMERICAN MUSEUM OF NATURAL HISTORY
NEW YORK, N. Y.

CONTENTS OF VOLUME LXVIII

JANUARY, No. 1

Reviews:	CHRISTOPHER GEROULD	4
Who Watches the Bird Watchers?		
Geophysical Year Ends	WALTER SULLIVAN	10
Ancient Monarch of the Seas		22
Celestial Events: January-June	K. L. FRANKLIN	24
Sky Reporter	HENRY M. NEELY	27
Floating Islands	GEORGE K. REID	30
Stone Age Implements—Part I		
First Tools of Mankind	JACQUES BORDAZ	36
Croesus among the Insects	JAMES M. BRENNAN	56

FEBRUARY, No. 2

Reviews in Brief		61
Penguins—Part I		
Polar Realm of the Emperors	JEAN RIVOLIER	66
Sky Reporter	HENRY M. NEELY	83
New Light on the Crustaceans	HOWARD L. SANDERS	86
DRAWINGS BY KENNETH GOSNER		
Stone Age Implements—Part II		
The New Stone Age	JACQUES BORDAZ	92
(The Mesolithic and Neolithic Periods)		
Petroglyphs in Peril	ETHLYN GORSLINE	110

MARCH, No. 3

Reviews:	MARSTON BATES	116
The Ecology of Animals and Man		
Corals—Part I		
Questions of the Coral Reefs	NORMAN D. NEWELL	118
Predaceous SpheX	PHOTOGRAPHS BY NILS GONNERT	132
Sky Reporter	HENRY M. NEELY	139
Chemistry of Growth in Plants	ANTON LANG	142
Penguins—Part II		
History of the Penguins	ROBERT CUSHMAN MURPHY	152

APRIL, No. 4

Reviews:	CHRISTOPHER GEROULD	172
Ten Books by Museum Authors		
Cosmic Steps	ILLUSTRATIONS BY HELMUT WIMMER	178
Banding in the Alps	PHOTOGRAPHS BY ALBERT WINKLER	183
The First Ninety Years	ALDEN STEVENS	186
Sky Reporter	HENRY M. NEELY	223
Corals—Part II		
Biology of the Corals	NORMAN D. NEWELL	226
(West Indian Reefs)		
Flowering Desert	JACK McCORMICK	238

MAY, No. 5

Reviews:	ALVIN NOVICK	242
How Bats Find their Way About		
Wanderers of the Ocean	WILLIAM N. TAVOLGA	248
The Wind at Work	RICHARD L. THRELET	256
The Ma'dan:		
Marsh Dwellers of Iraq	GAVIN MAXWELL	266
Invader of the South	EDWARD O. WILSON	276
Sky Reporter	HENRY M. NEELY	283
Western Grebe Colony	ROBERT W. NERO	291
PHOTOGRAPHS BY FRED W. LAHRMAN		

JUNE—JULY, No. 6

Reviews:	CHRISTOPHER GEROULD	298
Paperback Books with a Purpose		
The Timely Grunion	BOYD W. WALKER	302
Ancient Hatti	EDITH PORADA	308
The Camera as a Research Tool		320
The Tides—Part I		
Astronomical Influences	THOMAS D. NICHOLSON	326
Alaskan Challengers of the Seas	G. M. DAETZ	334
Celestial Events: July—December	K. L. FRANKLIN	348
Sky Reporter	HENRY M. NEELY	351

AUGUST—SEPTEMBER, No. 7

Reviews:	CHARLES M. BOGERT	362
Recording the Sounds of Nature		
A Summer's Learning	JOHN HAY	370
Adaptation of a Sand Wasp	HOWARD E. EVANS	380
Work Animals of the Orient	CHRISTOPHER RAND	384
Sky Reporter	HENRY M. NEELY	401
Arctic Summer	JOHN J. KORANDA	404
The Red Prairie Sunflower	JACK McCORMICK	420

OCTOBER, No. 8

Reviews:	BOB SCHAEFFER	426
A Study of <i>Latimeria Chalumnae</i>		
October Eclipse	THOMAS D. NICHOLSON	430
The Clock of the Bees	MAX RENNER	434
Goldenrod Gall	JACK McCORMICK	442
Visit to a Congo Jamboree	AL AND LOTTE BLAUSTEIN	446
Sky Reporter	HENRY M. NEELY	453
Darwin and the Fossil Record	ALFRED S. ROMER	456
The Tides—Part II		
The Margins of the Restless Ocean	HUBERT A. BAUER	470
Young Scientist		
Observations on Development and Behavior of "spiny mice"	MIRIAM DICK	479

NOVEMBER, No. 9

Reviews:	GEORGE GAYLORD SIMPSON	492
Creatures Extinct, Living and Fictional		
Hydra: An Immortal's Nature	ALLISON L. BURNETT	498
Chemistry in Plant Societies	JAMES BONNER	508
Sky Reporter	HENRY M. NEELY	517
Last Pagans of the Hindu Kush	PETER SNOY	520
The Wild Rat	ANTHONY BARNETT	532
Fighting Among Birds	STUART SMITH	538

DECEMBER, No. 10

Reviews:		554
Children's Books for Christmas		
Marco Polo's Unicorn	LEE M. TALBOT	558
The People of the Peacock Angel	L. P. HARVEY	566
The Roots of Healing		578
Schooling Fish	EVELYN SHAW	592
What About Weather?	NORMAN J. MACDONALD	598
Sky Reporter	HENRY M. NEELY	609
Young Scientist		
A Study of Fish Populations	WILLIAM R. KEM	612

INDEX TO VOLUME LXVIII

AUTHORS AND TITLES

A

Aiz J. W., COMMENTARY: A STUDY OF FISH POPULATIONS, 614

B

Barnett, A., THE WILD RAT, 532
Bates, M., THE ECOLOGY OF ANIMALS AND MAN, Review, 116
Bauer, H. A., THE TIDES: THE MARGINS OF THE RESTLESS OCEAN, PART II, 470
Blaustein, A. & L., VISIT TO A CONGO JAMBOREE, 446
Bogett, Ch. M., RECORDING THE SOUNDS OF NATURE, 362
Bonnet, J., CHEMISTRY IN PLANT SOCIETIES, 503
Bordaz, J., STONE AGE IMPLEMENTS: FIRST TOOLS OF MANKIND, PART I, 36; THE NEW STONE AGE, PART II, 92
Brennan, J. M., CROCSUS AMONG THE INSECTS, 56
Burnett, A. L., HYDRA: AN IMMORTAL'S NATURE, 498

D

Daetz, G. M., ALASKAN CHALLENGERS OF THE SEA, 334
Dick, M., YOUNG SCIENTIST: OBSERVATIONS ON DEVELOPMENT AND BEHAVIOR OF "SPINY MICE", 479

E

Emerson, W. K., SEA SHELLS OF TROPICAL WEST AMERICA, Review, 287
Evans, H. E., ADAPTATION OF A SAND WASP, 380

F

Franklin, K. L., CELESTIAL EVENTS, 24; 348

G

Getouled, Ch., REVIEWS: WHO WATCHES THE BIRD WATCHERS? 4; TEN BOOKS BY MUSEUM AUTHORS, 172; PAPERBACK BOOKS WITH A PURPOSE, 298
Gorsline, E., PETROGLYPHS IN PERIL, 110

H

Harvey, L. P., THE PEOPLE OF THE PEACOCK ANGEL, 566
Hay, J., A SUMMER'S LEARNING, 370

K

Kejn, W. R., YOUNG SCIENTIST: A STUDY OF FISH POPULATIONS, 612
Koranda, J. J., ARCTIC SUMMER, 404

L

Lang, A., CHEMISTRY OF GROWTH IN PLANTS, 142
Lanyon, W. E., NATURE ON RECORDS, Review, 108

M

McCormick, J., FLOWERING DESERT, 238
THE RED PRAIRIE SUNFLOWER, 420
GOLDENROD GALL, 442
Macdonald, N. J., WHAT ABOUT WEATHER, 598
Maxwell, G., THE MA'DAN: MARSH DWELLERS OF IRAQ, 266
Murphy, R., CUSHMAN, PENGUINS: HISTORY OF THE PENGUINS, PART II, 152

N

Neely, H. M., SKY REPORTER, 27; 83; 139; 223; 283; 351; 401; 453; 517; 609
Nero, R. W., WESTERN GREBE COLONY, 291
Newell, N. D., CORALS: QUESTIONS OF THE CORAL REEFS, PART I, 118; BIOLOGY OF THE CORALS, PART II, 226
Nicholson, Th. D., OCTOBER ECLIPSE, 430; THE TIDES: ASTRONOMICAL INFLUENCES, PART I, 326
Novick, A., HOW BATS FIND THEIR WAY ABOUT, Review, 242

P

Patt, A. E., IN THE YEARS AHEAD, 220
Porada, E., ANCIENT HATTI, 308

R

Rand, Ch., WORK ANIMALS OF THE ORIENT, 384
Reid, G. K., FLOATING ISLANDS, 30
Rehner, M., THE CLOCK OF THE BEES, 434
Rivoli, J., PENGUINS: POLAR REALM OF THE EMPERORS, PART I, 66
Romet, A. S., DARWIN AND THE FOSSIL RECORD, 456

S

Sanders, H. L., NEW LIGHT ON THE CRUSTACEANS, 86
Schaeffer, B., A STUDY OF *Latimeria chalumnae*, Review, 426
Shaw, E., SCHOOLING FISH, 592
Simpson, G. G., CREATURES EXTINCT, LIVING OR FICTIONAL, Review, 492
Smith, S., FIGHTING AMONG BIRDS, 538
Snay, P., LAST PAGANS OF THE HINDU KUSH, 520
Stevens, A., THE FIRST NINETY YEARS, 186
Sullivan, W., GEOPHYSICAL YEAR ENDS, 10

T

Talbot, L. M., MARCO POLO'S UNICORN, 558
Tavolga, W. N., WANDERERS OF THE OCEAN, 248
Threet, R. L., THE WIND AT WORK, 256
Tobach, E., COMMENTARY: OBSERVATIONS ON DEVELOPMENT AND BEHAVIOR OF "SPINY MICE", 482

W

Walker, B. W., THE TIMELY GRUNION, 302
Wilson, E. O., INVADER OF THE SOUTH, 276

SUBJECT MATTER

AMPHIBIANS AND REPTILES

ANCIENT MONARCH OF THE SEAS, 22
FLOATING ISLANDS, 30

ANIMAL BEHAVIOR

ADAPTATION OF A SAND WASP, 380
ALASKAN CHALLENGERS OF THE SEA, 334
BIOLOGY OF THE CORALS, PART II, 226
CLOCK OF THE BEES, THE, 434
FIGHTING AMONG BIRDS, 538
HOW BATS FIND THEIR WAY ABOUT, Review, 242
HYDRA: AN IMMORTAL'S NATURE, 498
INVADER OF THE SOUTH, 276
OBSERVATIONS ON DEVELOPMENT AND BEHAVIOR OF "SPINY MICE", 479
POLAR REALM OF THE EMPERORS, PART I, 66
PREDACEOUS SCHEX, 132
SCHOOLING FISH, 593
STUDY OF FISH POPULATIONS, A, 612
STUDY OF *Latimeria chalumnae*, A, Review, 426

WESTERN GREBE COLONY, 291
WHO WATCHES THE BIRD WATCHERS, Review, 4
WILD RAT, THE, 532

ANTHROPOLOGICAL STUDIES

ANCIENT HATTI, 308
FIRST TOOLS OF MANKIND, PART I, 36
LAST PAGANS OF THE HINDU KUSH, 520
MA'DAN: MARSH DWELLERS OF IRAQ, THE, 266
NEW STONE AGE, THE, PART II, 92
PEOPLE OF THE PEACOCK ANGEL, THE, 567
PETROGLYPHS IN PERIL, 110
VISIT TO A CONGO JAMBOREE, 446

ARCHEOLOGICAL STUDIES

ANCIENT HATTI, 308
FIRST TOOLS OF MANKIND, PART I, 36
LAST PAGANS OF THE HINDU KUSH, 520
NEW STONE AGE, THE, PART II, 92

ASTRONOMY

CELESTIAL EVENTS, 24; 348
COSMIC STEPS, 178
GEOPHYSICAL YEAR ENDS, 10
MARGINS OF THE RESTLESS OCEAN, THE, THE TIDES: PART II, 470
OCTOBER ECLIPSE, 430
SKY REPORTER, 27; 83; 139; 223; 283; 351; 401; 453; 517; 609
TIDES, THE, PART I, 326; PART II, 470
WHAT ABOUT WEATHER? 599

BIRDS

ARCTIC SUMMER, 404
BANDING IN THE ALPS, 183
CREATURES EXTINCT, LIVING OR FICTIONAL, 492
FIGHTING AMONG BIRDS, 538
FLOATING ISLANDS, 30
HISTORY OF THE PENGUINS, PART II, 152
POLAR REALM OF THE EMPERORS, PART I, 66
WESTERN GREBE COLONY, 291

BOOK REVIEWS

Animal Camouflage, 548
Ant World, The, 300
Arctic Year, The, 61
Badger, The, 300
Behavior and Evolution, 177
Birds, The, 62
Birds of the Palearctic Fauna, The, 172
Bird Wonders of Australia, 105
Birth and Development of the Geological Sciences, 300
Celts, The, 105
Dictionary of Biology, A, 300
Dictionary of Science, A, 300
Ebb and Flow, 62
Ecology of Invasions by Animals and Plants, The, 116
Elephants, 546
Emperor Penguins, 166
Etruscans, The, 105
Fascinating World of Butterflies, The, 61
Flower Chronicles, 64
Georgia Birds, 64
Getting Acquainted with Minerals, 64
Golden Book of Nature Crafts, The, 177
History of Astronomy from Thales to Kepler, A, 300
History of Nature, The, 354
Immense Journey, The, 354
Instinctive Behavior: The Development of a Modern Concept, 4
John Burroughs: Naturalist, 548
Kamongo or the Lungfish & the Padre, 354
Kon-Tiki, 354

Language of Rocks, The, 62
Life, 174
Life of the Robin, The, 300
Light, 62
Listening in the Dark, 242; 364
Living Birds of the World, 172
Living Forest, The, 236
Matter, Earth and Sky, 61
Medieval and Early Modern Science, 300
Millions of Years Ago, 236
Mountain World, The, 287
Nature as Architect, 62
Nature of Light and Color in the Open Air, The, 356
Nature Stories from the Vienna Woods, 548
New Biology, quarterly magazine, 356
Nine Planets, The, 172
1001 Questions Answered about Astronomy, 174
On the Track of Unknown Animals, 492
Paperbound Books in Print, 298
Peter Freuchen's Book of the Seven Seas, 289
Principles of Zoology, 174
Run, The, 550
Science News, quarterly magazine, 356
Sea Shells of Tropical West America, 287
Search beneath the Sea, 426
Short Introduction to Archaeology, 61
Social Life of Animals, The, 354
Spiders, Scorpions, Centipedes, and Mites, 62
Story of Archaeology, The, 61
Story of the Plant Kingdom, The, 550
Tarantula, The, 62
Theory of Evolution, The, 300
Tree Identification, The, 550
Vikings of the Pacific, 354
Watching Birds, 298
World of Butterflies, and Moths, The, 61

BOOK REVIEWS FOR CHILDREN

Animal Habits, 555
Animals that Help Us, 555
Aquarium Book for Boys and Girls, 554
Birth of an Island, 616
Book of Turtles and Lizards, 557
Cave Hunters, The, 616
Experiments in Sky Watching, 554
Grasslands, 557
Here come the Raccoons, 554
Insect Builders and Craftsmen, 557
Man, Moss and Reindeer, 616
My Best Friends are Apes, 555
1001 Questions Answered about the Mineral Kingdom, 557
Plants that Heal, 557
People and Places, 616
Pigs, Tame and Wild, 555
Porcupine Known as J.R., The, 555
Road of Seasons, The, 554
Rocket Handbook for Amateurs, The, 554
Sinbad the Gorilla, 555
Soon after September, 554
Story of Flight, The, 554
This is Nature, 554
Trees, 557
Unknown Ocean, The, 554
Weasel Family, The, 555
Whitfoot Mouse, 555
Wild Animal Pets, 555
Wild Folk at the Seashore, 554

BOTANY

ARCTIC SUMMER, 404
 CHEMISTRY IN PLANT SOCIETIES, 508
 CHEMISTRY OF GROWTH IN PLANTS, 142
 FLOATING ISLANDS, 30
 FLOWERING DESERT, 238
 GOLDENROD CALL, 442
 RED PRAIRIE SUNFLOWER, THE, 420
 ROOTS OF HEALING, THE, 578

ECOLOGY

ALASKAN CHALLENGERS OF THE SEA, 334
 ARCTIC SUMMER, 404
 CHEMISTRY IN PLANT SOCIETIES, 508

CLOCK OF THE BEES, THE, 424
 ECOLOGY OF ANIMALS AND MAN, THE, REVIEW, 116
 HYDRA: AN IMMORTAL'S NATURE, 498
 EMBRYOLOGY, LIFE HISTORY, AND GROWTH
 ADAPTATION OF A SAND WASP, 380
 ALASKAN CHALLENGERS OF THE SEA, 334
 ARCTIC SUMMER, 404
 BIOLOGY OF THE CORALS, PART II, 226
 CHEMISTRY IN PLANT SOCIETY, 508
 CHEMISTRY OF GROWTH IN PLANTS, 142
 HISTORY OF THE PENGUINS, PART II, 152
 HYDRA: AN IMMORTAL'S NATURE, 498
 INVADER OF THE SOUTH, 276
 POLAR REALM OF THE EMPERORS, PART I, 66
 QUESTION OF THE CORAL REEFS, PART I, 118
 TIMELY GRUNION, THE, 302
 WANDERERS OF THE OCEAN, 248

ETHNOLOGICAL STUDIES

ANCIENT HATTI, 308
 LAST PAGANS OF THE HINDU KUSH, 520
 MA'DAN: MARSH DWELLERS OF IRAQ, THE, 266
 PEOPLE OF THE PEACOCK ANGEL, THE, 567
 VISIT TO A CONGO JAMBOREE, 446
 WORK ANIMALS OF THE ORIENT, 384

FISHES

FLOATING ISLANDS, 30
 SCHOOLING FISH, 593
 STUDY OF FISH POPULATIONS, A, 612
 STUDY OF *Latimeria chalumnae*, A, REVIEW, 426
 TIMELY GRUNION, THE, 302
 WANDERERS OF THE OCEAN, 248

GEOLOGY

BIOLOGY OF THE CORALS, PART II, 226
 DARWIN AND THE FOSSIL RECORD, 456
 GEOPHYSICAL YEAR ENDS, 10
 QUESTIONS OF THE CORAL REEFS, PART I, 118
 WIND AT WORK, THE, 256

HABITAT

ADAPTATION OF A SAND WASP, 380
 CHEMISTRY IN PLANT SOCIETIES, 508
 MARCO POLO'S UNICORN, 559
 SUMMER'S LEARNING, A, 370

INSECTS AND SPIDERS

ADAPTATION OF A SAND WASP, 380
 BIOLOGY OF THE CORALS, PART II, 226
 CLOCK OF THE BEES, THE, 424
 CREATURES EXTINCT, LIVING OR FICTIONAL, 492
 CROESUS AMONG THE INSECTS, 56
 INVADER OF THE SOUTH, 276
 PREDACEOUS SPHEX, 132

INVERTEBRATES

BIOLOGY OF THE CORALS, PART II, 226
 FLOATING ISLANDS, 30
 HYDRA: AN IMMORTAL'S NATURE, 498
 MARGINS OF THE RESTLESS OCEAN, THE, PART II, 470
 NEW LIGHT ON THE CRUSTACEANS, 86
 QUESTIONS OF THE CORAL REEFS, PART I, 118
 SUMMER'S LEARNING, A, 370

MAMMALS

ALASKAN CHALLENGERS OF THE SEA, 334
 ARCTIC SUMMER, 404
 CREATURES EXTINCT, LIVING OR FICTIONAL, 492
 FLOATING ISLANDS, 30
 HOW BATS FIND THEIR WAY ABOUT, REVIEW, 242
 MARCO POLO'S UNICORN, 559
 OBSERVATIONS ON DEVELOPMENT AND BEHAVIOR OF "SPINY MICE", 479
 WILD RAT, THE, 532
 WORK ANIMALS OF THE ORIENT, 384

METEOROLOGY

ARCTIC SUMMER, 404
 GEOPHYSICAL YEAR ENDS, 10
 WHAT ABOUT WEATHER, 599
 WIND AT WORK, THE, 256

MISCELLANEOUS

AMERICAN MUSEUM OF NATURAL HISTORY, THE 90TH ANNIVERSARY ISSUE, 186
 ART OF EXHIBITION, THE, 194
 DISTANT JOURNEYS, 210
 FIRST NINETY YEARS, THE, 187
 IN THE YEARS AHEAD, 220
 PUBLIC INSTRUCTION, 214
 RESEARCH IS THE FOUNDATION, 204
 CAMERA AS A RESEARCH TOOL, THE, 320
 NEW DIRECTOR APPOINTED, 361
 PAPERBACK BOOKS WITH A PURPOSE, REVIEW, 298
 ROOTS OF HEALING, THE, 578

NATURALIST'S NOTEBOOK

CROESUS AMONG THE INSECTS, 56
 FLOWERING DESERT, 238

OCEANOGRAPHY

GEOPHYSICAL YEAR ENDS, 10
 MARGINS OF THE RESTLESS OCEAN, THE, PART II, 470
 SUMMER'S LEARNING, A, 370
 TIDES, THE, PART I, 326; PART II, 470
 TIMELY GRUNION, THE, 302

PALEONTOLOGY

BIOLOGY OF THE CORALS, PART II, 226
 DARWIN AND THE FOSSIL RECORD, 456
 NEW LIGHT ON THE CRUSTACEANS, 86
 QUESTIONS OF THE CORAL REEFS, PART I, 118
 STUDY OF *Latimeria chalumnae*, A, 426

PARASITISM see SYMBIOSIS

RECORD REVIEWS

American Bird Songs, vols. 1&2, 364
Bridge on the River Kwai, The, 366
Don Charles Presents the Singing Dogs, 416
Eastern Bird Songs, 366
Echoes of the Pied Pipers of Hamlin, 418
Evening in Sapsucker Woods, An, 368
Florida Bird Songs, 364
Jungle Sounds, 368
Lot of Insects, A, 364
Mexican Bird Songs, 108; 366
Mockingbird Sings, The, 364
Music and Bird Songs, 368
Music in Nature, 416
National Network of American Bird Songs, 366
Recording the Sounds of Nature, 362
Songbirds of America, 364
Songs of Insects, 366
Sounds of the American Southwest, 368
Sounds of Animals, 364
Sounds of North American Frogs, 364
Sounds of Sea Animals, Nos. 1&2, 364
Sounds of a South African Homestead, 368
Sounds of a Tropical Rain Forest in America, 368
Superb Lyrebird, The, 364
Symphony of the Birds, 368
Voices of African Birds, 366
Voices of the Night, 368
Western Bird Songs, 364; 366
Witherby's Sound-Guide to British Birds, 416

REPTILES see AMPHIBIANS

SPIDERS see INSECTS

SYMBIOSIS AND PARASITISM

ADAPTATION OF A SAND WASP, 380
 ALASKAN CHALLENGERS OF THE SEA, 334
 BIOLOGY OF THE CORALS, PART II, 226
 GOLDENROD CALL, 442

